Reusable Take-Out Cups in Banff

Final Report

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Acknowledgments

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Introduction

Purpose

The Biosphere Institute of the Bow Valley is a charity that empowers community leadership to address environmental challenges. Biosphere and its collaborators – Town of Banff, Banff & Lake Louise Tourism, Banff & Lake Louise Hospitality Association – want to proactively expand reuse, starting with take-out coffee cups in Banff and later scaling to Lake Louise, and in future, to include other types of single-use items.

The purpose of this report is to share key learnings from research and engagements to support a shift towards reusable take-out cups in Banff. It is based on the understanding that any approach to implementing reusable take-out cups in Banff should be appropriate for scaling to other single-use food items.

Methods

Methods used for this project included:

- Literature review,
- Public Perception survey (N=122)
    - in person at banff farmers market (n=44); and
    - online (n=78),
- Interviews with others involved in reuse programming and services, including:
    - Reuse Seattle,
    - Return-It Vancouver,
    - reusable service providers (n=3), and
    - a café owner using reusables (n=1),
- Meetings with Biosphere and partners..

Reusables in Food Service

Reusables in food service – containers, cups and products that are borrowed by customers and returned after the food or beverage is consumed to be cleaned and restocked for use – have greater potential for positive environmental impact than recycling and composting because they contribute towards a circular economy. A circular economy is one in which resources are continuously reused, thus reducing upstream inputs (materials, manufacturing, energy consumption) and limiting or eliminating waste. Recycling and composting reduce waste, however less than 10% of the world's plastic is actually recycled and 22% is mismanaged (OECD, 2022). Behavioural change and a cultural shift away from single-use items is needed for significant impact on Canada's waste problem (UBC, 2023). Reusables in food service has significant potential to affect change, however reusable products that have low return rates or that are not durable enough to withstand many borrowing cycles will not significantly reduce upstream inputs or waste. Therefore, best practices need to be established and scaled.

There are already noticeable shifts within the food service industry towards recyclable and compostable single-use products such as take-out cups, foodware, cutlery, and stir sticks. Reusables are still an emerging approach, with new providers of reuse products and new literature on reuse systems popping up frequently. Efforts to increase reusables in Banff at a town level are trailblazing. This means there are few operating models to learn from at the town or municipal level, and those that exist are not yet fully operational as broad scale,

shared-system approaches. However, people working towards reuse who were interviewed for this project shared a spirit of co-learning and willingness for open discussion that will be valuable for Banff partners as they move forward.

Banff Context

Banff is a town and a tourist destination within a National Park. The townsite has approximately 9,500 residents (AB Government, n.d.) and is small, easy to walk around, has public transit and a downtown area with many shops, galleries, cafes and restaurants. Banff's sole economy is the visitor economy. On a typical summer day the population can reach 43,000 once adjusted for visitors (Town of Banff, n.d.). Banff attracts people from neighbouring towns as well as all over the world. Many who visit Banff also visit other regional attractions such as Lake Louise and the town of Canmore. Businesses, residents, and visitors highly value Banff's nature and beauty. The Town of Banff was awarded *the reusies Community Action of the Year 2023 Policy* award (the reusies, 2023) for its *Single-Use Items Reduction Strategy and Bylaw* which requires all businesses to use reusable foodware for dine-in and to have a written policy to accept reusable cups and containers that customers bring. Businesses are being encouraged to shift to reusables for take-out items, although there is no legal requirement. Identifying the most promising ways to support a shift towards reuse requires consideration of: high number of regional and international visitors, including visitors who do not speak English or French; high turnover in business staff; high business volumes, leaving little time for onboarding customers; range of businesses, including franchises with branding requirements, large and small hotels, and small local cafés without dishwashers.

Prior to this project, Biosphere and partners connected and held engagement sessions with businesses to offer information, explore opportunities and challenges, and foster commitment towards reuse in Banff.

Uncoordinated vs. System-Level Approaches to Reuse

Reuse approaches can be thought of on a continuum ranging from uncoordinated to system-level. See Figure 1.

Figure 1: Continuum of approaches to reuse

In the uncoordinated approach, reusables emerge and scale according to the motivations of businesses and consumers and the availability of reuse options. There is no intentional effort or resource allocation to support use of reusables within a targeted area or sector. In contrast, the

system-level approach depends on coordination and collaboration to build a shared, inter-operable system for reusables that diverse businesses and consumers can join into.

The system-level approach offers significant benefits compared to waiting for businesses to pursue their own independent approaches to reuse:

- *Evidence informed and context specific strategies* – Coordination can streamline research, leverage resources, bring together stakeholders and facilitate information sharing for a more holistic perspective. This leads to better understanding of the enablers and barriers in a specific area or sector and better-informed decision making.
- *Shared infrastructure and services* (PR3, n.d.) - Policies can help create a more level playing field for businesses. Collection bins, washing service, transportation infrastructure and services can be shared across food service businesses.
- *Affordability* – Bulk purchasing of reusable products can reduce the cost of per-use packaging compared to single-use items (PR3, n.d.). Shared infrastructure for washing and transportation also increases affordability.
- *Ease of entry for businesses* – An established reuse system - which could include materials for educating employees and customers, incentives for businesses, shared collection, wash and transport services, digital platforms, assurance of evidence-informed decisions, and more – make it easier for businesses and customers to choose reuse.
- *Convenience for customers* – Aligned messaging and volume needed to create convenient, public borrow and return locations makes reuse convenient for customers.
- *Real-time measurement* – Shared digital tracking platforms that monitor number of borrows, rate of return, customer information, and other data can enable businesses and localities to see the impact of reuse, to monitor trends, and to make adjustments for continuous improvement to the system.
- *Scalability* (PR3, n.d.) - By its nature of involving diverse stakeholders, a system-level approach considers scalability from the beginning. Coordination can help to more quickly identify needed supports or barriers and address them. This makes it easier for businesses to switch to reuse and thus speeds scaling.

A system-level approach requires stakeholders who serve as catalysts, collaborators, and coordinators. For a municipality or a sector, a system approach can make it easier to enter and quicker to scale reuse. It thus holds potential for greater environmental impact. A "systemic approach is necessary for reuse to become affordable, efficient, and convenient and scale across sectors and global regions in a way that provides a solution to both the climate and plastic crises." (PR3, 2023. p1)

To support the global development of effective reuse systems and advance best practices, global standards (PR3, n.d.) have been developed and are continually being improved. See Appendix A for an overview of global standards, which relate to: collection points; containers; digital requirements; return incentives; labeling and education; reverse logistics; and washing, sanitizing and handling of foodware.

Guiding Principles for an Effective Reuse System

This section offers guiding principles for building an effective reuse system. They emerged from literature review and from interviewees working in system-level reuse efforts. These are high-level guiding principles. The following section provides information related to system characteristics.

A. Connect reusables to a larger, shared vision.

Reusables are not an end goal; they are a means to achieve a larger vision. Framing reusables within a larger vision can broaden the range of stakeholders, resources, and actions that become part of the system. A shared vision offers collective grounding for decision making when stakeholders are motivated by different interests. It will define the types of data collection needed to monitor and continually improve the system and communicate impact. A shared vision can help diverse stakeholders see how they fit in the system, what roles they can play, and what they can contribute. Pursuing reuse by looking through the narrow lens of reuse programming will limit the range of possibilities that are considered compared to looking at reuse as part of a larger vision.

Seattle Public Utilities (SPU) provides Seattle residents with drinking water, drainage and wastewater, and solid waste services. It frames reuse within the larger vision of advancing zero waste. Framing reuse this way makes it obvious that a strong reuse system is in the City's best interests. This has resulted in the City allocating personnel and budget to build the system. Reuse Seattle is a City-led initiative to help businesses switch from single-use to reusable foodware. Coordination support is provided by Seattle Public Utilities (SPU), with support from Cascade Consulting and other partners. A rebate program (Reuse Seattle, n.d.) offers businesses a $500 incentive for shifting towards reuse. SPU staff administer the program, provide coordination support, conduct outreach and relationship building with businesses, manage a resource list of reusable service providers, and generally foster connections and offer support as businesses shift towards reusables. Efficiencies in public communication have also been created by viewing reusables within the larger vision of zero waste. Signage, social media, and other messaging stretches beyond reusable cups and containers to also advocate the use of durables for dining-in and bringing your own container or cup as common practice. Reuse Seattle's approach is much broader than 'reusable programming'.

Reuse Seattle also has a vision for the reuse system: accessible, affordable, equitable, easy, scalable, interconnected, everywhere. This vision makes the importance of relationship building obvious. It can also provide guidance for decision making, which can be important when different stakeholders have different interests and as new opportunities emerge.

Return-It Vancouver's pilot (Return-It, n.d.) frames reusables within the larger vision of reducing waste. Their approach thus includes two strategies: (1) creating shared infrastructure for reusables, and (2) reducing contamination in the recycling stream to divert recyclables away from landfill. Return-It and its food service partners have designed three-part public collection bins that include: (a) a receptacle for liquid waste, (b) a collection bin for recyclable cups, and (c) a collection bin for reusable cups. Any businesses that meet reusable cup standards which ensure cups can be washed at a centralized facility can join the system (at a cost) and have their reusable cups collected, picked up, washed, and returned to their own distribution depots. Combining these recycling and reuse strategies has benefits. It reduces contamination of recyclables, thus diverting them from landfill. As people use the recycling bins, it raises awareness that reusable options exist. It offers customers convenient locations to dispose of

their single-use recyclables and reusables. It also creates efficiencies for businesses for the collection, washing, and transportation of their own branded reusable cups.

B. Focus on creating conditions that enable reuse.

Shared reuse systems require some flexibility if they are to meet the non-negotiables of different stakeholders and be responsive to different needs. The Seattle case offers examples. Seattle events serving large numbers of people prefer plastic cups that are light and easy to stack so that collection bins can be smaller and shipping to and from wash facilities is easier. In contrast, some Seattle businesses have values that prohibit them from using plastics. Some businesses and franchises prefer or require their own branded cups. Liquor service requires a clear cup. Some businesses want to collect and wash their own reusables while others lack dishwashing facilities and require a wash service. The goal of an interoperable, shared system makes it near impossible to prescribe one approach for all stakeholders. Instead, Seattle has focused on creating conditions that enable reuse, which include: a supportive policy environment, relationships and partnership, guiding standards, incentives, coordination support, and communication/education to promote reuse culture.

Return-It Vancouver sought to understand the conditions needed for reuse in order to support food service brands they were already working with. They identified the need for convenient, public return locations for customers and corresponding collection, washing and repacking for businesses. Wash machines at a contracted wash facility necessitate certain cup characteristics (material, size), which were used to create cup standards for businesses to join in shared collection, washing, packing and transportation. Businesses pay a fee to use these services. In this way, Return-It has created conditions that make reuse easier while allowing opportunities for businesses to brand and design their own cups in alignment with standards.

In general, reuse needs to be made easy for customers and businesses. The best ways to do this depend on local context. For Banff, this uniquely requires attention to the high volume of visitors and the rapid emergence of innovative reuse products and processes. As one interviewee commented, "There are so many small providers and business approaches, but which ones can make a go of it is questionable. Scalability will make or break any of the programs and providers." Investing heavily in a certain approach for all stakeholders may be risky compared to investing in conditions that broadly enable reuse.

Based on PR3 standards (PR3, n.d.), conditions that enable a shared, interoperable systems include:
- shared collection points,
- compatible containers with digital tracking and labelling for easy/consistent customer recognition that the product is part of the reuse system,
- support for washing and transportation for those who need it,
- return incentives - which may or may not be the same for every user but should facilitate a return rate of at least 90%,
- digital platform for monitoring and continuously improving the system.

Based on information gathered for this project, other conditions for enabling reuse include:
- ease for customers,
- ease for businesses,
- intentional relationship building,
- consistent public messaging,

- coordination support,
- flexibility as new technologies, standards and strategies emerge.

C. Aim for scalability in all decision making.

Scale is essential for resourcing and supporting the components of an interoperable reuse system. Although it is difficult to say with certainty which characteristics will enable a reuse system to scale, it is clear that scaling is essential for sustainability. From the initial planning stage and onwards, potential for scaling needs to be carefully considered as each decision about the system is being made. Return-It chose to start large-scale by working with larger brands (Tim Hortons, A&W Canada, Starbucks Canada) to create volume needed for a centralized wash facility and to mobilize resources for designing and manufacturing public collection bins. Reuse Seattle chose to start large-scale by focusing on high-volume closed-loop venues (venues where customers do not leave the premises with the reusable cup and so cups can all be collected on site) to create volume needed for a centralized wash facility. In these cases, starting large-scale to support a centralized wash facility is an example of creating a condition needed to enable reuse. Creating scale early in the process might not be necessary for every reuse system, but making decisions with scalability in mind is. Scalability cannot be an afterthought.

Reuse System Characteristics

This section offers key learnings for logistics of reuse systems and the Banff context.

Considerations for Financial Health

Financial health is essential for a reuse system's sustainability. Three crucial parameters of financial health are (Searious Business & Zero Waste Europe, 2023. p14):

- *Rotation Cycles before End of Life (RC)* - This is the average number of cycles a cup is reused before becoming unusable, for example due to damage, scratches, or staining. A greater number of rotation cycles reduces end of life impact (waste, recycling need) as well as upstream inputs because of repurchasing. Recommendations vary from a minimum of 4 rotation cycles (Searious Business & Zero Waste, 2023. p15) to a minimum of 10 rotation cycles (PR3, n.d.).
- *Return Rate (RR):* The percentage of cups returned at the end of each use cycle. This is an important indicator of how many cups will need to be repurchased.
- *Retention Time (RT):* The average number of days between when a cup is borrowed and when it is returned. A longer retention time requires more cups to be put into circulation. Retention time can be measured by the average length of time it takes customers to return a cup (customer retention time) or the average length of time it takes a cup to be back in stock after customer return, collection, washing and redistribution (full rotation retention time).

A Banff waste audit in August, 2023, found approximately 3,700 single-use cups entering the waste stream in Banff's pedestrian zone across four days, or roughly 1,000 cups per day. This scenario will be used to illustrate how Return Rate and Retention Time affect system costs.

Imagine a reuse system is launched in the pedestrian zone with 500 reusable cups, and an average of 50 reusable cups are borrowed per day. (50 cups per day represents 5% of the 1000 single-use cups disposed of daily in the pedestrian zone.)

A formula can be used to estimate the number of Cups in Stock (CS) available for borrowing on a given day. The formula is dependent on:

- C = number of reusable cups in the reuse system, in this case C=500
- D = number of days since launch of the reuse system
- B = average number of cups borrowed per day, in this case B=50
- RR = average Return Rate
- RT = average Retention Time, or the average time it takes for cups to be back in stock for borrowing

$$CS = C - (D \times B) + (RR \times B \times (D - RT))$$

Figure 2 demonstrates how Return Rate impacts the number of cups in stock. It assumes an average customer retention time of four days. This estimate is based on a European study which found that when customers were charged a non-return fee at 14 days, the average customer retention time was 4 days (Searious Business & Zero Waste Europe, 2023). Cups will begin returning to stock on the 5th day after being washed by receiving cafes.

Figure 2: Impact of Return Rate on Cups in Stock for Borrowing - 4 Day Retention Time

Assumptions:
- 500 reusable cups in the system (C=500)
- 50 cups are borrowed per day (B=50)
- average retention time is 4 days, so cups begin returning to stock on the 5th day (RT=4)

Days Since Launch (D)	Cups in Stock for Borrowing (CS)			
	Return Rate 98% (RR=0.98)	Return Rate 95% (RR=0.95)	Return Rate 90% (RR=0.9)	Return Rate 80% (RR=0.8)
Day 1	450	450	450	450
Day 2	400	400	400	400
Day 3	350	350	350	350
Day 4	300	300	300	300
Day 5	299	297	295	290
Day 10	294	285	270	240
Day 20	284	260	220	140
Day 30	274	235	170	40

Return Rate clearly has a significant impact on system costs. PR3 standards call for a minimum return rate of 90% to mitigate waste and upstream inputs (PR3, n.d.). In comparison, Alberta's refund- based recycling program achieved a return rate of 84% in 2021 (Did You Know, n.d.) Reuse systems that use high quality cups with high Rotation Cycles before End of Life (RC), such as stainless steel cups, obviously must achieve high return rates for the system to be

financially healthy. Reuse systems that use inexpensive cups with lower RC may be able to pass the cost of repurchasing cups onto businesses or customers, however non-returned cups end up in the waste stream, defeating the goals of reuse. Lack of digital tracking on inexpensive cups makes it difficult to hold service providers accountable to goals such as return rates, waste diversion rates, and reducing upstream inputs.

Figure 3 demonstrates how Retention Time affects the number of cups in stock. The scenario above is adjusted for an average Retention Time of eight days instead of four days. For comparison, the same European study (Searious Business & Zero Waste Europe, 2023) found that a shared reuse system with an average customer retention time of four days had an average full rotation retention time (after collection, washing, redistribution) of twelve days.

Figure 3: Impact of Return Rate on Cups in Stock for Borrowing - 8 Day Retention Time

Assumptions:
- 500 reusable cups in the system (C=500)
- 50 cups are borrowed per day (B=50)
- average retention time is 8 days, so cups begin returning to stock on the 9th day (RT=8)

Days Since Launch (D)	Cups in Stock for Borrowing (CS)			
	Return Rate 98% (RR=0.98)	Return Rate 95% (RR=0.95)	Return Rate 90% (RR=0.9)	Return Rate 80% (RR=0.8)
Day 1	450	450	450	450
Day 3	350	350	350	350
Day 5	250	250	250	250
Day 7	150	150	150	150
Day 8	100	100	100	100
Day 9	99	97	95	90
Day 10	98	95	90	80
Day 20	88	70	40	-20
Day 30	78	45	-10	-120

Reducing the retention time and increasing the return rate are key for a financially healthy reuse system. Related system characteristics such as cup design, return incentives, and collection points, are discussed in the next section.

Collective Measurement

Collective measurement within a reuse system is valuable for:
- understanding progress and impact, including point-in-time and trends for businesses, consumers, and reuse educators;
- informing continuous improvement of the system;
- communicating the system's impact to motivate business and consumer engagement and to mobilize resources such as volunteers, grants or other investments.

Different reuse stakeholders may have different monitoring needs. For a shared system, agreement should be reached on which crucial indicators require collective monitoring to build and sustain a healthy system. Crucial monitoring may vary depending on the system's vision. For example, a system that strives to be financially self-sufficient will require different monitoring than a system with social objectives such as training and employment for people often excluded from the labour market. A system that connects reuse to the vision of reducing waste might also monitor the volume of single-use recyclable and compostable items diverted away from landfill.   Figure 4 lists a range of indicators for reuse systems.

Figure 4: Possible Indicators for Reuse Systems

Long-term business and consumer engagement: - # businesses - # cups/month - # unique or repeat users/month - business and customer feedback ratings - user profile data to understand end users (Ie. location of origin, rates of use, location of cup access, location of cup return) - cost savings/month for businesses Reuse rates: - rate of return - retention rate - cup cycles before end-of-life - replacement rate of cups	Environmental impact: - # single-use cups replaced - reductions in weight/volume of pedestrian waste - transportation/resource costs for reverse logistics - environmental impact of reverse logistics (washing, transportation) Other: - cost savings for waste management - cost contributions for centralized supports - volunteer hours to support reuse, including education - impact of education programs - # and attendance for education events - customer/visitor feedback on experience, attitude or behaviour change - # of local employment hours created

Banff's tourism context should be considered when interpreting indicators. For example, repeat customers may not be as significant a measure of success in Banff as in other contexts. In addition, the goals and monitoring needs of Banff's reuse system may shift over time.

Cup Design and Return Incentives

Return incentives typically take the form of deposits, no-return fees, or rewards. PR3 Standards recommend return incentives to be optimally set to achieve a 90% or higher return rate.

Cup design will inform the most appropriate type of return incentive. Lower-cost plastic cups may not require any incentive to achieve high return rates in closed-loop settings; in open or network settings they are a better fit for deposit/refund incentives. Interviews indicate that plastic cups with deposit/refund incentives are yielding low return rates outside of closed-loop venues. Expensive cups, such as stainless steel or ceramic, require a no-return fee. This is because they require a large incentive to achieve a 90% return rate due to their high value. A large deposit would create a significant barrier for customers compared to a large no-return fee. Reusables in Vancouver charges a no-return fee of $20 on its stainless steel containers and incentivizes loyalty and returns by using a membership option ($5 per month) for unlimited borrows (Reusables, n.d.). Muuse (Muuse, n.d.) offers customers free borrowing of its stainless

steel cups for up to 30 days before charging a no-return fee of $20 and also provides customers exclusive offers to incentivize reuse. More than half of Banff survey respondents (58%), when shown Muuse's high quality cup, said they were likely to want to keep the cup as a souvenir. Banff will need to carefully monitor return rates to set the optimal incentive for a very high return rate. A Banff survey respondent recommended using a reward system in addition to a no-return fee to incentivize faster return times.

Cup design is likely to be informed by the borrowing context. PR3 standards recommend cups to be the lowest weight possible and designed to nest, or at least to minimize volume during transport (PR3, n.d.). This is less important when customers return cups to the businesses they borrowed from, reducing transportation requirements. As reuse scales up and public collection points or centralized wash service are initiated, transportation and related costs/emissions will also scale up. Trade-offs between cup quality, weight, stackability, rotation cycles before end-of-life, and ultimately environmental impact, need to be considered in relation to the borrowing context. Return-It Vancouver has opted for plastic cups that require smaller collection bins and can be easily transported by e-bikes to reduce emissions. Closed-loop venues that serve large numbers of people benefit from light, stackable cups because of smaller collection bins and easier transport from collection bins to wash facility and back to venue. Reuse Seattle demonstrates that plastic cups can achieve a high return rate at closed-loop venues even without return incentives, thus supporting more rotation cycles before end-of-life. Muuse's stainless steel cups (Muuse, n.d.) offer a quality product with high rotation cycles and feasible recycling (stainless steel) and reuse (silicone lid) at end-of-life. Cup and container options continue to emerge. Reusables' RFID chips and Smart Return Bins (Reusables, n.d.) offer an innovative, unstaffed option for return of high quality cups, especially in closed-loop venues. Although a shift away from plastics is desired and recommended by PR3 Standards, Banff's reuse system may need to create supportive conditions for different types of cups for different contexts while allowing flexibility for new options to be embraced.

Branding is a point of interest in the Banff context. Other locales have had to address branding questions, however Banff's tourism context elevates branding as a consideration. In Vancouver, Return-It launched its support for reusables in partnership with large brands that could quickly build the volume of reuse and contribute resources towards shared infrastructure. As such, allowing branding options was necessary. Return-It has cup requirements for wash compatibility, but businesses have the option of designing and branding their cups as long as they meet those requirements. Banff survey responses point to the feasibility of Banff branding for Banff's reuse system. 69% of respondents said they preferred a cup with Banff branding or that branding was not important to them, suggesting that Banff branding would be received well. Only 9% of respondents said they preferred a cup with branding of the business they purchased their beverage from. However, outreach work prior to this project indicates that business branding is non-negotiable for some businesses in Banff.

Centralized Wash Service, Collection Points, and Transportation

A significant volume of reuse is required to support a dedicated, centralized wash service. In both Seattle and Vancouver, this was made possible by pursuing scale from the beginning. Other options, such as contracting businesses who have unused washing capacity, are also possible.

Interviews suggest a wash volume of 70,000 units per day are needed to justify building a dedicated wash facility. This aligns with the 75,000 units per day capacity of Re:Dish's warewashing facility in the USA (Re:Dish, n.d.). Sufficient volume is not likely to come from the

wash facility's own reusable products, particularly at launch. A centralized wash facility can contract to provide wash services to event centres, events, or other reusable service providers in addition to washing its own reusable products. Contract costs for washing service tend to range from $.10 to .20 per container to ensure a viable wash facility. A social purpose wash facility that pursues goals broader than profit, for example creating employment for those typically marginalized from the labour market, might also generate revenue through grants or other means. Reusable providers who contract with the wash facility can pass washing costs to businesses via service or subscription rates. Wash costs can also be passed to customers by charging a borrow fee or only partially refunding customer deposits on cups. This approach conflicts with a PR3 recommendation to fully return deposit amounts whenever possible (PR3, n.d.).

As required by PR3 standards, wash services must meet food handling and sanitation requirements. Reuse Seattle had to work with the County-based health department to change regulations to allow for offsite washing of foodware. Even when this is allowed, interviews indicate that businesses may need to be assured that reusables and their collection, washing and transport do not increase risk of contamination. Involving Alberta Health Services in clarifying and communicating this could be an important part of onboarding businesses to a shared reuse system.

According to Banff survey respondents, the five most desired collection point locations are: the business they borrowed from; main street; hotels; public parking lots; Canmore.

An inventory of community assets could help identify options for transporting reusables between collection points, wash facilities, and businesses. The City of Seattle had an existing contract with a third-party hauler for waste, recycling and compost collection. They added a fourth bin (reusables) to their contract for street-side bin collection. Return-It contracted transportation with a local e-bike courier company.

Coordination & Support

As mentioned previously, a shared reuse system requires coordination and support to create conditions that enable reuse. Examples of coordination roles include:

- *Bridge and advocate for a supportive policy environment* - The Town of Banff already has a Single-Use Reduction Strategy and Bylaw. As reuse scales up, a coordinating body can receive feedback on unanticipated barriers and bridge or advocate to regulatory bodies to better enable reuse.
- *Coordination of partnerships and collaborations* - For example:
    - backbone support to convene, take notes, follow-up with key stakeholders who are investing or collaborating in the shift towards reuse,
    - if desired, create a registry of reuse providers operating in the area to make it easy for businesses to explore reuse options,
    - seek stakeholder input on shared infrastructure, such as type of collection bins and locations, pick-up frequency, branding if any, etc.
- *Business outreach and support* - Intentional outreach and relationship building can speed scaling. Support might include:
    - information and education for businesses,
    - connections between businesses and reusable service provider(s),
    - training resources for businesses to onboard their staff,
    - signage and communication materials for businesses to onboard their customers.

- *Ongoing education and communication campaign* - A significant shift towards reuse will require ongoing education and communication to engage Banff visitors, residents and businesses and build a culture of reuse.
- *Monitoring and reporting* - Whether there are one or multiple reusable service providers operating in Banff, collective monitoring and reporting beyond what a reusable provider's tracking app can provide will likely be required to support a strong education and communication campaign.
- *Administering incentive programs* - As in the case of Reuse Seattle, any incentive programs for businesses will require administration.
- *Resourcing for shared services* - Coordination can increase resource options for shared services, for example by building strategic relationships, advocating for resources, seeking out grants and writing proposals.

About Social Enterprise

A social enterprise can be defined as "*a revenue-generating organization whose objective is to have a social impact*" (Gov't of Canada, 2019). Social enterprise can exist via a variety of models. This project explored the feasibility of Biosphere Institute of the Bow Valley operating a social enterprise for reusables in Banff. Business activities by a charity organization must be run substantially by unpaid volunteers or linked to their registered charitable purpose and also subordinate to that purpose (Gov't of Canada, 2020). Biosphere's purpose is to empower community leadership to address environmental challenges. It does this by collecting and disseminating information about the Bow Valley ecosystem, developing educational materials and offering learning opportunities, and supporting or carrying out original research. Reusable business activities do not meet the Canada Revenue Agency's requirements for Biosphere to carry out a related business activity. As such, a separate entity would need to be incorporated to carry out reusable business activities. With so many reusable service providers entering the market and investing so heavily in innovative products and digital platforms, Biosphere would have to significantly divert resources and energy away from its primary mission in order to pursue a reusable social enterprise.

About Social Finance

Social finance may be a resourcing option for reusable providers to expand their markets, create new products, or scale their businesses. Social finance is a type of debt financing that intends to be easier to access, easier to repay, and that expects the investee to deliver a measurable social, cultural or environmental impact (Imagine Canada, 2020). Organizations that access social finance must be prepared to generate revenue to repay the financing and meet their investors' goals.

The Government of Canada's Social Finance Fund (SFF) is a main player in social finance in Canada. The $755 million fund is overseen by three fund-of-fund managers: Boann Social Impact, CAP Finance, and Realize Capital Partners (Gov't of Canada, 2023). In most cases, social purpose organizations will apply for funding from the SFF through a social finance intermediary. Intermediaries work to connect those who create social, cultural or environmental impact with investors. Intermediaries may include, for example, community loan funds, credit unions, chartered banks, Indigenous financial institutions or others. Intermediaries deal directly with the SFF's fund managers or with other investors. There may be value in

raising awareness of social finance among social purpose organizations aiming to scale reuse in Banff.

Approach to Scaling

As mentioned previously, scaling is critical for a sustainable reuse system. Figure 5 summarizes three different approaches to scaling that were shared in interviews and meetings and the benefits each offers. These three approaches do not need to be mutually exclusive.

Figure 5: Three approaches to scaling and corresponding benefits

Start large-scale with closed-loop venues	Start large-scale with high volume brands	Start small and scale over time
- quickly generates volume for centralized wash facility - less pressure to design for customer use because customers do not leave the venue with the cup - opportunity to test reuse processes, collection bins, technologies in a controlled context - inherently high return rate - raises public awareness and familiarity with reuse	- quickly generates volume for centralized wash facility - generates volume needed for collection bins on public land and for transportation contracts - businesses may invest in shared infrastructure such as collection bins - built infrastructure makes it easier for smaller businesses to opt in Note: requires flexibility for branding	- low investment and reduced risk up front - test processes, communications, and products in novel tourist context - generate data to communicate the benefits and impact of reuse - tap into community assets, Ie. unused wash potential at businesses, volunteers - allows time to strengthen relationships with high volume brands

As mentioned previously, framing reuse within a larger vision, such as waste reduction, can spark creative thinking about strategy and actions for scaling. If a Banff-branded approach is pursued and high volume brands do not opt in because of their requirements or desire to brand their own cups, there may be other ways to engage those businesses in the larger vision of waste reduction. For example:

- Businesses may implement their own reusables, ideally with high return rates: Waste audits could provide feedback to businesses that do not monitor their own return rates.
- Businesses might continue to use recyclable or compostable single-use cups: Banff could, similar to Return-It, combine reuse with strategies to reduce contamination at collection points. Return-It's proprietary collection bins could be helpful for this.

Conclusion

Increasing the use of reusables in the food and beverage industry is a rapidly growing and changing effort that involves consumers, food and beverage businesses, grocery stores, event organizers, reusable product vendors, wash and delivery vendors, governments, nonprofits, and more. Literature review and interviews indicate that a system-level approach offers greater benefits and scaling opportunities than an uncoordinated approach to reuse. The collaborating

partners in Banff are early players in the evolving field. As a result, there isn't an operating model that easily stands out as a best and replicable model for Banff. Connecting reuse to a larger vision, creating conditions for reuse, and considering scalability across all decisions are promising guidelines for growing an impactful and sustainable reuse system. As reuse products, services, and processes continue to emerge and evolve, international standards offer promising guidance for growing a system-level approach that will not quickly become irrelevant or outdated.

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Appendix A: Overview of PR3 Global Standards for Reuse

See The PR3 Standards (PR3, n.d.) for more details.

System Characteristics	Must	Should
Containers	- withstand 10 use cycles on average - include reuse labelling with reuse symbol, type & value of incentive, return instructions - incorporate a data carrier, Ie. QR code - optimize durability, be non-tainting, withstand leaching and commercial dishwashing	- be plastic-free when possible - not contain layers or materials that impede recycling - be designed to nest or at least minimize transport volumes - be lowest weight possible - have 90 degree or greater interior angles for washing and avoid gaps that trap liquid - be harmonized as much as possible across brands for logistical efficiencies
Collection Points	- display reuse symbol - incorporate the color orange - specify clear instructions for return - incorporate a digital tag with standardized data fields (see Digital) - accommodate users with disabilities	- may be staffed, automated collection machines, or unstaffed collection bins (requirements are provided for each of these)
Digital	Collection Point digital tags must include data fields for: - Collection Point ID - Company ID - Company ID Type - Consumer URL - links from data fields to other data such collection point location & type Container digital tags must include data fields for: - Packaging ID Type - Company ID - Company ID Types - Consumer URL - links from data fields to other data such as cleaning instructions, incentive type & value, inventory management	- additional data fields may be included on collection points or containers - recommendations for digital language and data administration are provided

Return Incentives	- include incentive type and value on consumer's sale receipt For systems that charge a fee for containers not returned within a time period: - include a unique ID for each container - have a reuse service provider to manage fees	- take the form of Deposit, Reward, Fee, or None - be assigned to achieve a 90% or higher return rate as required by the setting (Ie. closed-loop venues such as theatres may not require an incentive) - for Deposits, be returned in full where possible
Labeling & Education	- include orange HEX #ff6600 - include the reuse symbol see Standards for other details	- see Standards for various recommendations
Reverse Logistics	- achieve an average return rate of at least 90% - follow collection schedules, container & bin handling consistent with sanitation standards and industry best practices (see guidelines for details) - log each container as it enters, sort for efficient washing and redistribution, and ensure a count of each container washed according to method used - handle, store and transport clean containers in bins and vehicles consistent with sanitation standards	
3rd Party Washing, Sanitization and Handling	See Standards for requirements related to: - employee health & personal hygiene - machine warewashing - hand warewashing - foodware storage requirements - foodware handling requirements - record keeping requirements	